Recommended Guidelines
For
Sampling Emulsified Bituminous Materials

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NOTICE

The following document was developed by the AEMA International Technical Committee and is offered as a guideline only. It is not to be relied upon as advice or as a standard AEMA assumes no liability for the use of this guideline. Contact AEMA for answers to questions and for a list of AEMA member Manufacturers and Suppliers.

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A. SCOPE

This method applies to sampling emulsified bituminous materials at the point of manufacture, storage, or delivery. Samples may be taken from sample ports, tanks, vehicles, or containers used for storage or shipping of emulsified bituminous materials. If the sample is taken outside of the Emulsion Production Facility, i.e. vehicles or containers used for storage or shipping, the sample may not accurately represent the material as manufactured by the emulsion supplier.

B. SIGNIFICANCE

Sampling is as important as testing and every precaution shall be taken to obtain samples that will show the true nature and condition of the materials. Samples are taken to represent an average of the bulk of the materials sampled.

C. SELECTION OF SAMPLES

The frequency of emulsified bituminous material samples shall be taken in accordance with local Standard Specifications.

D. SIZE OF SAMPLES

The sample size of emulsified bituminous material samples submitted for pre-approval or certification shall be 3.75 L (one gallon). The sample size of all emulsified bituminous materials submitted for acceptance testing shall be of adequate size to perform all required testing or at a minimum one liter (one quart), unless otherwise specified. Sample containers shall be filled to within 25 to 50 mm (1 to 2 in.) of the top of the container.

E. CONTAINERS

1. Emulsified bituminous materials – Clean / New wide mouth plastic bottles with screw caps.

F. PROTECTION AND PRESERVATION OF SAMPLES

1. All sample containers shall be new, clean and dry. Sample containers shall not be washed or rinsed with solvents. Sample containers shall not be wiped with an oily or solvent-saturated cloth.

2. Immediately after filling the container, the lid shall be tightly affixed to the container. Care shall be taken to prevent contamination of samples by solvents, other types of bituminous materials, water, dust, or any other substance foreign to the material being sampled.

3. The filled sample container shall not be submerged in solvent, nor shall it be wiped with a solvent-saturated cloth. If cleaning is necessary, use a clean dry cloth.

4. Samples of emulsified bituminous material shall be protected from freezing, excessive agitation or excessive heat by using insulating material to pack around the sample container.

5. Transferring samples from one container to another shall not be permitted except where required by the sampling procedure such as for duplicate/split or round-robin testing. If

transferring the sample from one container to another is necessary, it is best for this to occur within the first 10 minutes of the original sample being taken. The sample should then be divided into suitable containers and sent to the testing facility. Splitting the sample should not take place after the sample has cooled down or days after the sample was obtained.

6. After filling, affixing the lids, and cleaning the containers (if necessary), the sample paperwork (sample ID form) shall be completely and legibly filled out, signed, and affixed to the sample container in such a manner to prevent damage to the form. Masking tape shall be used to affix the sample ID form to the container. In case of inclement weather, the sample ID form will be sealed in a plastic envelope for protection. Strapping (fiber) tape, scotch tape, or duct tape should not be used for this purpose as they can damage the sample ID form upon removal from the container.

7. Samples of all emulsified bituminous materials shall be forwarded to the Materials Division or agency approved testing facility for testing as soon as possible. Emulsified bituminous materials are time dependent and testing must be completed within 7 days of the sample date.

G. SAMPLING PROCEDURES

Sampling will be performed by the contractor, emulsified bituminous materials supplier, or their representatives. Agency personnel should observe the procedure to ensure conformance to this specification. Sample containers will be provided by the Agency.

Sampling should not be permitted from production lines – the material in the production line is not representative of the material in the entire storage tank.

Sampling from a sample valve in a storage tank, vehicle tank, or distributor truck:

1. Sample valves shall conform to AASHTO T40.

2. Before the sample of asphalt emulsion is taken from the tank or distributor, it shall be circulated for a sufficient amount of time to ensure the sample will be representative of the tank or distributor being sampled.

3. Before the sample is taken, a minimum of 4 liters (1 gallon) of emulsified bituminous material will be drawn from the valve and discarded in order to ensure a representative sample.

Sampling by the dip method:

1. Samples shall be taken from the approximate midpoint of the load, or volume being sampled, by lowering an approved sampling device, as described in ASTM D-140, into the emulsified bituminous material and opening the device at the appropriate level. Sampling device must be clean, free of solvent and dry. DO NOT USE THE SAME SAMPLE DEVICE FOR MULTIPLE SAMPLES WITHOUT FIRST CLEANING AND DRYING THE DEVICE.

2. After sampling, the emulsified bituminous material will be transferred to an appropriate container as specified in Section E, Containers.

Sampling by the spray bar method:

1. This method may be used for emulsified bituminous materials when it is not feasible to sample with a sample valve.

2. Samples shall be taken from a nozzle in the spray bar following complete circulation of the material. Take the sample ideally after one-third of the load has been removed and before two-thirds of the load has been removed. Care shall be taken to ensure that there is no pressure on/in the spray bar and the pump supplying the emulsion to the spray bar is not engaged.

H. PACKAGING & SHIPPING OF THE SAMPLE

1. The agency representative shall ship the sample to the lab the same day it is taken

2. Protect the sample from freezing, excessive heat and excessive agitation by using insulating material around the sample container

3. Make sure that the sample is packed and labeled properly

4. Make sure the sample container is sealed tightly

5. Do not transport emulsion samples in the cargo hold of airplanes (shipping overnight)

I. SAFETY PRECAUTIONS

1. Gauntlet style heat-resistant gloves and suitable eye protection shall be worn while sampling hot bituminous products and while sealing containers.

2. Do Not use open flames to heat or free stuck valves.

3. There shall be no smoking during sampling operations.

4. Avoid Breathing any Fumes, Mists and or Vapors

5. Obtain and read the MSDS from the Supplier

J. REHEATING OF THE EMULSION SAMPLE

1. Prior to testing, the entire sample of emulsion shall be placed in a 60°C (140°F), or other temperature deemed appropriate, forced draft oven for a minimum of 4 hours. The sample shall remain in the oven until it reaches the target temperature or until it is uniformly heated. It is recommended that the sample be placed inside of a disposable pan in the event the sample container has a leak.

2. The emulsion shall remain in the oven, undisturbed, during the reheating process.

3. Avoid Breathing any Fumes, Mists and or Vapors

K. ENSURING HOMOGENAITY OF THE EMULSION SAMPLE

1. After reheating of the emulsion sample (J), care should be taken in opening the sample container in the event that any pressure has built in the sample container due to the heating process. The emulsion shall be uniformly stirred under low shear. A spatula, mixer, stir rod or other means of low shear agitation is appropriate.

2. A sample of the representative emulsion shall be taken only after the emulsion sample has been stirred under low shear and is deemed to be homogeneous.

3. Avoid Breathing any Fumes, Mists and or Vapors